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UNITED STATES DISTRICT COURT

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NORTHERN DISTRICT OF CALIFORNIA

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SAN FRANCISCO DIVISION

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REARDEN LLC and REARDEN MOVA LLC,	Case Nos. 3:17-cv-04006-JST
	3:17-cv-04191-JST
Plaintiffs,	**REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED**
vs.	
	DECLARATION OF GREGORY LASALLE IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT ON CAUSAL NEXUS ISSUE
THE WALT DISNEY COMPANY, WALT DISNEY MOTION PICTURES GROUP, INC., BUENA VISTA HOME ENTERTAINMENT, INC., MARVEL STUDIOS, LLC, and MANDEVILLE FILMS, INC.,	
	Judge: Hon. Jon S. Tigar
	Date: To be set
Defendants.	Time: To be set
	Ctrm.: 9 (19th Floor)

Case Nos. 3:17-cv-04006-JST, 3:17-cv-04191-JST

DECLARATION OF GREGORY LASALLE

1   REARDEN LLC and REARDEN MOVA
    LLC,
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                    Plaintiffs,
3
          vs.
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    TWENTIETH CENTURY FOX FILM
5   CORPORATION and TWENTIETH
    CENTURY FOX HOME
6   ENTERTAINMENT LLC,
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                    Defendants.
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1 I, Gregory LaSalle, hereby declare:

2   1. I am the Director of Visual Development at Digital Domain 3.0, Inc. ("DD3"). Except for

3 those matters stated on information and belief, I have personal knowledge of the contents of this

4 declaration. I am reliably informed of the matters stated on information and belief, and I believe

5 such matters to be true. If called as a witness in this action, I could and would testify competently

6 to the contents of this declaration.

7   2.   I understand that Plaintiffs' claims in the above-captioned case relate to facial motion

8 capture work in connection with the character of the "Beast" in *Beauty and the Beast*. DD3 was

9 hired as a visual special effects vendor for *Beauty and the Beast*, including the development of the

10 Beast character.

11   3. As the first step in a very long process of creating the Beast, DD3 used the MOVA

12 Contour system to capture facial motion data of the actor playing the Beast, Dan Stevens. The

13 data set was used to derive a tracked mesh of Dan Stevens's facial expressions. Various software

14 programs can be used to convert a dense data set (such as the MOVA data set) into a tracked

15 mesh, including some open source programs. An example of one of the tracked mesh images,

16 superimposed on top of Dan Stevens's face, appears below.

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1   4.   Separately, DD3 animators and digital artists craft by hand 3D base models of the Beast

2   with a multitude of facial expressions—specifically, DD3 created approximately 1,000 iterations

3   of the Beast base model with varying facial expressions. Below is an image of one of the Beast

4   base models created by DD3 artists.
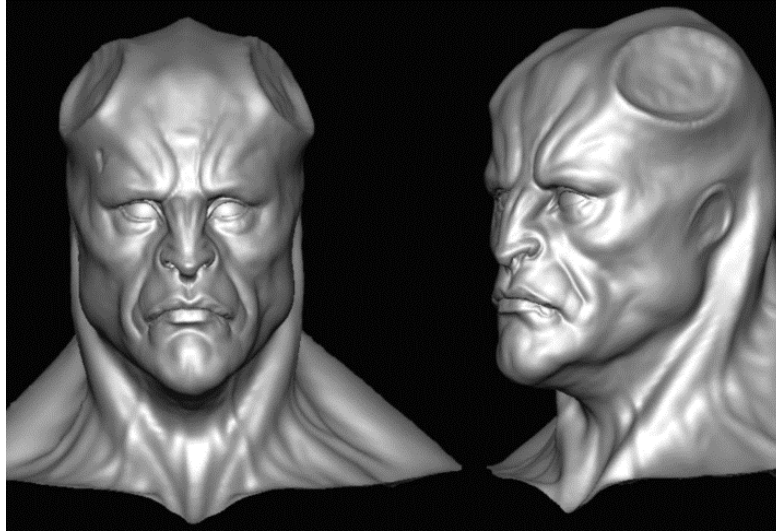
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14   5.   Translating the tracked mesh of the actor's facial expressions onto the 3D base models of

15   the Beast required the use of two proprietary software programs developed by DD3. One of these

16   software programs is called Direct Drive. Direct Drive is a sophisticated technology which was

17   developed from a more rudimentary "gradient transfer tool" program that DD3 used years ago.

18   Direct Drive has the ability to take a dense performance set—such as the tracked mesh derived

19   from any facial motion capture technology, including but not limited to MOVA—and

20   automatically transfer it to a dissimilar mesh (such as the rig of the Beast). Direct Drive

21   substantially cuts down on the hand animation required for recreating the facial performance on a

22   character's rig. Another software program developed by DD3—generally referred to as a "solver"

23   software—works in parallel with Direct Drive to deduce how much of each hand-modeled face

24   shape is used in translating the facial performance to the rig. Even after application of Direct

25   Drive and the "solver" software, further hand animation is required to create all of the eye

26   movements, teeth, tongue, and ears, and a substantial portion of the lip movement for the

27   character. None of these elements are adequately captured by MOVA data, and so must be

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-4-   Case Nos. 3:17-cv-04006-JST, 3:17-cv-04191-JST

DECLARATION OF GREGORY LASALLE

1   handcrafted onto the rig. Below is an image of the completed rig of the Beast after that process

2   has been completed.

9   6.   The completed rig of the Beast lacks any of the fur which is a critical part of this

10 character's look. DD3 animators handcrafted the fur with the aid of another proprietary software

11 developed by DD3 called Samson. Using Samson, animators inject guide hairs into the rig, and

12 then simulate how the hairs would react when subjected to gravity, wind, particles, matting, and so

13 on. Even with the mathematical precision of the Samson software, the end look is not always

14 visually satisfying, and animators must make passes with small tweaks of hand animation to get

15 the desired look for individual hairs. Various other software programs are used to model, animate,

16 and add texture to the Beast—from Z-Brush (a software program used for handpainting textures),

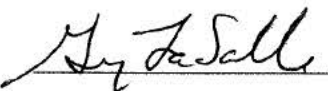17 to Nuke (a compositing software), to Maya (a broad ranging animation software package).

18   7.   In the last stage of rendering, all of the layers involved in creating the 3D image of the

19 Beast are translated into a 2D image for the movie screen. Below are images of some of the steps

20 involved in rendering the Beast.

DECLARATION OF GREGORY LASALLE

8. DD3 digital artists and animators invested an enormous amount of time, skill, and artistry in creating the final version of the Beast after the initial facial motion capture sessions with the actor. Over one hundred DD3 artists, animators, and supervisors were involved in creating shots in which the Beast appeared. They logged more than 170,000 hours working on the Beast and compositing the shots in which the Beast appeared; this includes modeling, texturing, rigging, lighting, animation, cloth-simulation, adding hair and fur, rotoscoping (removing Dan Stevens's image from the film), and much more. DD3 performed a multitude of other visual effects functions on *Beauty and the Beast*, separate from creation of the Beast. DD3 did not separately invoice all MOVA facial motion capture work and associated costs for *Beauty and the Beast*. If DD3 had separately invoiced the MOVA facial capture work using its standard pricing protocol, I estimate the amount would have been approximately ▋▋▋▋. This pricing information is considered confidential and part of DD3's proprietary business model.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct and that I executed this declaration this *27* day of February, 2019 at *Los Angeles, CA*.

Gregory LaSalle